



The cheap sensor!

Principal features:

- Sensing distance with fibre-optic
 - type FPCF 18 mm
 - type FPCP 60 mm
- Supply voltage 24 VDC
- Detection of one (LC2001) to four (LC2004) recorded colors
- TEACH-IN function: easy and quick adjustment
- External input for TEACH-IN (channel 1)
- 3 sensitivities: fine, medium and low
- Keyboard lock
- Programmable timer
- PNP or NPN switching output
- LIGHT ON / DARK ON output
- M12 plug
- DIP 65 polycarbonat housing
- CE

Applications:

- Detection of little marks and colored tags
- Quality control:
 - lids colour
 - presence of labels
- Detection of coloured cables
- Detection of translucent coloured parts
- Sorting out of coloured parts
- Detection of coloured codes

Advantages:

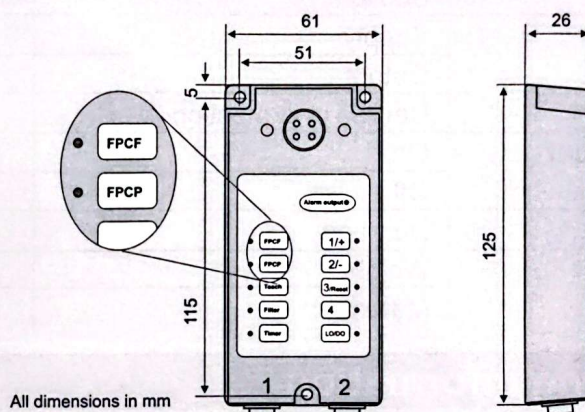
- Small spot diameter 1.5 mm
- Using of fibre-optic gives high flexibility
- Simple handling
- Detectable objects ≥ 0.5 mm
- 8 bit resolution

LED Colour Sensor with Teach-In

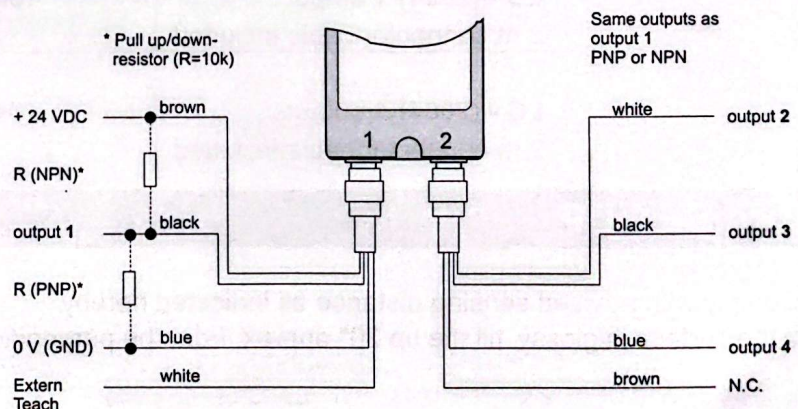
Series LC 2001 LC 2004

- Response time ≥ 1 ms
- Spot diameter 1.5 to 6 mm
- Sensing distance up to 60 mm
- Output PNP/NPN

Dimensions



Wiring connections



Operating and display elements

Programming for FPCF type and FPCP type:

To select sensitivity: fine, medium, large:

To record colors on output 1, 2, 3, or 4:

+

To adjust the timer:

+

To adjust the filter:

+

To select LIGHT ON / DARK ON:

Next to every key, a LED indicates the status of the function

Technical Data

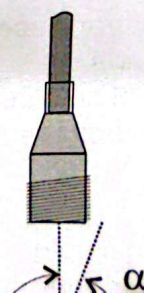
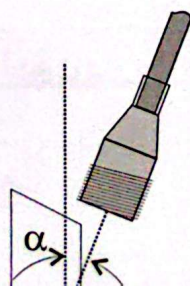
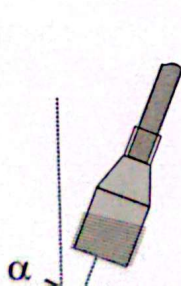
Supply	Operating voltage	24 VDC $\pm$ 10% res. ripple $\leq$ 10% (within specified limits)
	Current consumption	$\sim$ 120 mA
Response time	t_{on} or t_{off}	1ms (FPCF), 20 ms (FPCP)
	Switching frequency	500 Hz (FPCF), 25 Hz (FPCP)
Output	Max. output current	100 mA per output
	Residual voltage at 100 mA	$\leq$ 2,2 V
	Residual voltage at 10 mA	$\leq$ 0,5 V at low level
Light source	LED	red, green, blue
Timer	Range	0 to 5 sec.
	Increment duration	first increment: 50 ms, following incr. 250 ms
Data on ambiente conditions	Operating temperature	0 to 40 °C
	Storage temperature	- 20 °C to 60 °C
External light immunity	Incandescent light	3000 lux
	Sunlight	5000 lux
Protection	Supply	inverse polarity protected
	Output	permanent short-circuit or over-load protection
	Degree of protection	IP 65
Remote input	On	4 to 24 V, $t \geq 10 \mu s$
	Off	$\leq 1 V$
Recording	Duration	1 sec.
Mechanical data	Weight	app. 300 g (without fibre-optics)
	Material	Polycarbonate

Ordering information

Product	Colour sensor	Part No.
	LC - (2001) 1 output 2 m connector cable included	10461923
	LC - (2004) 4 outputs 2 m connector cable included	10461924

Fibre SET-UP

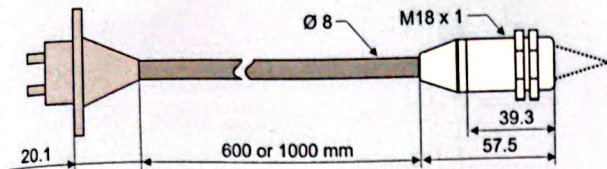
- Comply with advised sensing distance as indicated hereby
- If the surface is glossy, till the tip 20° approx. from the perpendicular to the surface.



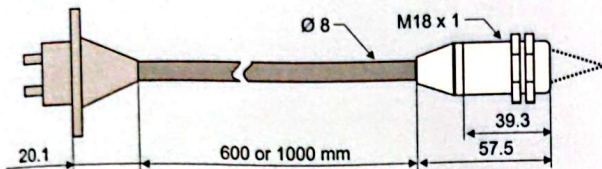
Diffuse Type

All dimensions in mm

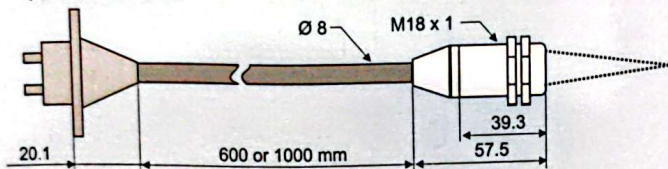
Application: Fine detection with focused spot $\varnothing 1.5$



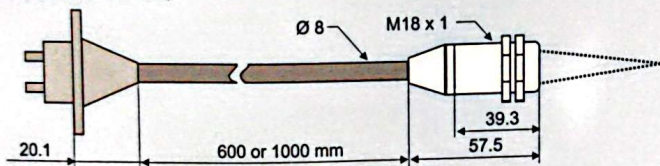
Application: Detection with focus spot $\varnothing 1.5$ for moving fibre



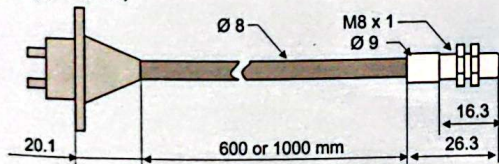
Application: Fine detection at fluctuating distances (spot approx. $\varnothing 6$)



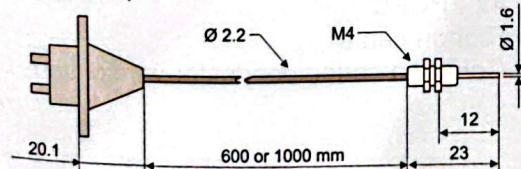
Application: Detection at fluctuating distances for moving fibre (spot approx. $\varnothing 6$)



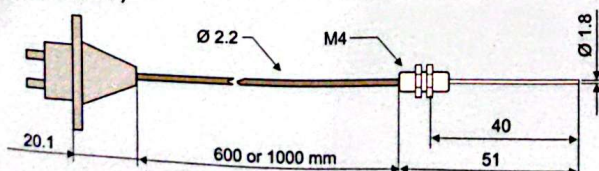
Application: Fine detection with small tip dimensions (spot $\varnothing 1.5$)



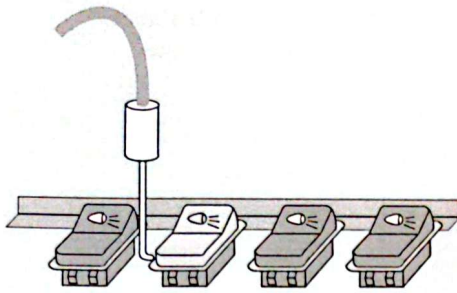
Application: Fine detection with needle nozzle tip (spot $\varnothing 2-3$)



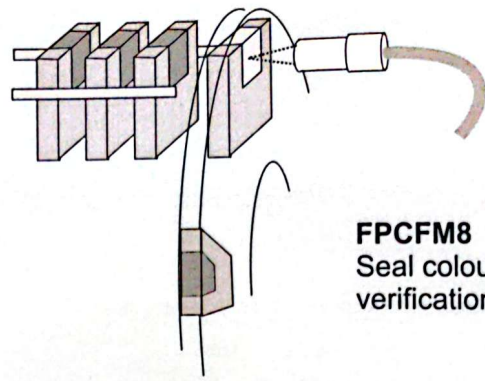
Application: Fine detection with needle nozzle tip and pliable extension (spot $\varnothing 2-3$)



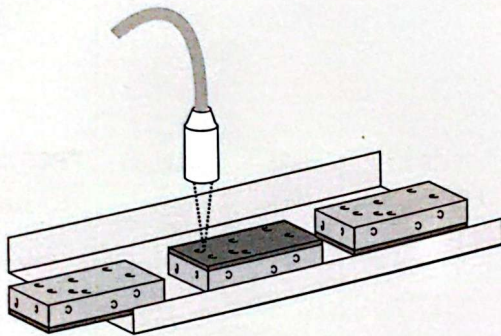
Reference	Length mm	Sensing Distance mm	Mode/TR	Spot $\varnothing$ mm
FPCF 61 FPCF 101	600 1000	16-20	FPCF / 1 ms	1.5
FPUCF 61 FPUCF 101	600 1000	16-20	FPCF / 1 ms	1.5
FPCP 61 FPCP 101	600 1000	40 to 60	FPCP / 20 ms	6
FPUCP 61 FPUCP 101	600 1000	40 to 60	FPCP / 20 ms	6
FPCFM8 61 FPCFM8 101	600 1000	3-7	FPCF / 1ms	1.5
FPCFA 61 FPCFA 101	600 1000	2-3	FPCF / 1 ms	3
FPCFC 61 FPCFC 101	600 1000	2-3	FPCF / 1 ms	3



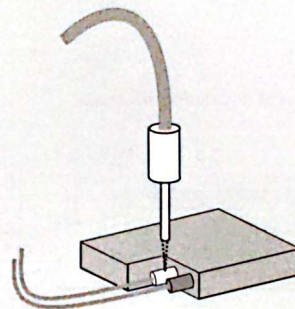
FPCFC
Rocker switch colour verification



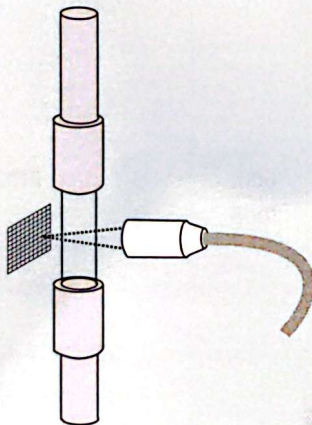
FPCFM8
Seal colour bends verification



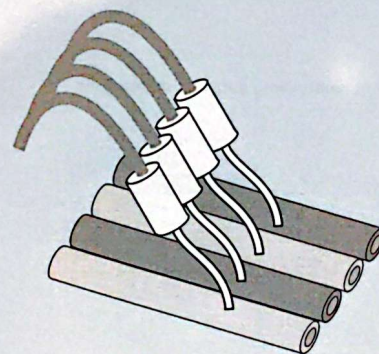
FPCP
Test of sponge orientation



FPCFA
Correct assembly of coloured plugs



FPCP with reflector
Liquid colour verification in a transparent tube, using a reflektor



4x FPCFC
Ribbon cable
Coloured coded conductor verification

Actual information:
www.eltrotec.com

Technical hotline:
+49/7161/15653-30

Presented by: